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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,058	01/29/2002	Yundong Wang	P 0290646 20256US/P0/	3673
909	7590	06/24/2004	EXAMINER	
PILLSBURY WINTHROP, LLP			LEE, RIPA	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	

1713

DATE MAILED: 06/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/058,058

Applicant(s)

WANG ET AL.

Examiner

Rip A. Lee

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 1 and 6-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1 and 12 are objected to because of the following informalities: The claims are directed to a process for preparing a thermoplastic elastomer, and therefore, step (b) must include the thermoplastic. As such, use of "and/or" is incorrect since it implies that the thermoplastic is an optional component. Instead, the additive is the optional component. Appropriate correction is required.
2. Claims 6-13 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim can not depend from another multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 6-13 have not been further treated on the merits.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 7 is rendered indefinite since it contains improper Markush language. According to MPEP § 2173.05(h), when materials are so related as to constitute a proper Markush group, they may be recited as, "wherein R is a material selected from the group consisting of A, B, C, and D," or "wherein R is A, B, C, or D."

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,862,106 to Fischer.

Fischer teaches a thermoplastic blend of partially cured EPDM rubber with polypropylene resin (title, abstract, entires 24-35 in Table 2, claims 1-3).

7. Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,187,224 to Hamanaka *et al.*

The prior art of Hamanaka *et al.* discloses a process of mixing and kneading an oil-extended copolymer rubber, polyolefin resin and peroxide using a twin-screw extruder to dynamically vulcanize the mixture. In a subsequent step, the resulting partially crosslinked product is kneaded with the remainder components, namely block copolymer and polyolefin resin. A twin-screw extruder may also be used in the latter step (see col. 7, lines 10-30). Example 1 shows that 114 pw of oil-extended EPDM, 28 pw of thermoplastic polypropylene, and 3.7 pw of cure package are blended in the first step to form the partially vulcanized rubber concentrate.

*Claim Rejections - 35 USC § 103*

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,187,224 to Hamanaka *et al.* in view of U.S. Patent No. 6,335,095 to Sugimoto *et al.*

The discussion of the disclosures of the prior art of Hamanaka *et al.* from paragraph 7 of this office action is incorporated here by reference. The reference mentions use of a twin-screw extruder to effect melt mixing, but it does not prescribe use of a single-screw extruder. However, it is deemed that the skilled artisan would have found it obvious to arrive at the notion of using a single screw extruder for melt mixing the prior art composition since there are only two types of extruder. It also would have been obvious to one of ordinary skill in the art to use single-screw extruders for melt-mixing thermoplastic materials in light of the fact that Sugimoto *et al.* recites specifically use of a single-screw extruders or twin-screw extruders such a purpose (see col. 7, line 59).

***Prior Art***

The prior art made of record on the accompanying PTO-892 but not relied upon is considered pertinent to the Applicant's disclosure. The references were been cited to show the state of the art with respect to rubber or elastomer concentrates.

In particular, U.S. Patent No. 5,714,545 to Lee *et al.* teaches a process of making a masterbatch, or concentrate, by melt mixing 190 parts by weight of 100 % oil extended ethylene-propylene diene (EPDM) rubber, 50 pw of polypropylene resin and 12 pw of phenolic resin curative (see Example I). Thereafter, the masterbatch was homogenously mixed with curing agent and EPDM rubber/polybutadiene to partially cure the EPDM rubber/polybutadiene mix.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

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June 17, 2004



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